



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

11A

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,777	03/04/2004	Michikazu Matsumoto	60188-793	4422

7590 12/12/2006

Jack Q. Lever, Jr.
McDERMOTT, WILL & EMERY
600 Thirteenth Street, N.W.
Washington, DC 20005-3096

EXAMINER

LEWIS, MONICA

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/791,777	Applicant(s) MATSUMOTO, MICHIKAZU	
	Examiner Monica Lewis	Art Unit 2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14,15,17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14,15,17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed November 14, 2006.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahn (U.S. Patent No. 6,110,771) in view of Matsuoka et al. (U.S. Patent No. 6,333,541) and Shepela et al. (U.S. Patent No. 6,060,397).

In regards to claim 14, Ahn discloses the following:

- a) a MOS transistor with a plurality of gate electrodes (124a and 124b) (For Example: See Figure 3);

Art Unit: 2822

b) the gate electrodes are formed on a semiconductor substrate (121) having a silicon layer at least in the surface thereof (For Example: See Figure 3);

c) the MOS transistor is formed in an element region surrounded with an isolation insulating film (122) (For Example: See Figure 3);

d) the gate electrodes are arranged between dummy patterns (124c and 124d) with a space left from each side thereof (For Example: See Figure 3);

e) sidewalls (125) are provided on side walls of each of the gate electrodes (For Example: See Figure 3);

f) a first silicide layer (128) is formed in the upper portion of the gate electrode (For Example: See Figure 3);

g) a second silicide layer (128) is formed in a portion of the semiconductor substrate surface which is located in part of the element region between the gate electrode and the dummy pattern (For Example: See Figure 3); and

h) one of the dummy patterns is dummy gate electrode (124c) which is an electrode pattern having the shape of a gate electrode, and the other dummy pattern is a pattern made of insulating material (123) and the dummy patterns are formed on the isolation insulating film (For Example: See Column 3 Lines 35-59).

In regards to claim 14, Ahn fails to disclose the following:

a) the gate length of .15 μm .

However, Matsuoka et al. ("Matsuoka") discloses a gate length of .15 μm (For Example: See Column 1 Lines 14 and 15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Ahn to include a gate length of .15 μm as disclosed in Matsuoka because it aids in helping the device run faster (For Example: See Column 1 Lines 10-23).

Additionally, since Ahn and Matsuoka are both from the same field of endeavor, the purpose disclosed by Matsuoka would have been recognized in the pertinent art of Ahn.

b) the first silicide layer has a greater thickness than the second silicide layer.

However, Shepela et al. ("Shepela") discloses a first silicide layer (10) has a greater thickness than the second silicide layer (7) (For Example: See Figure 7). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the semiconductor of Ahn to include a first silicide layer having a greater thickness than the second silicide layer as disclosed in Shepela because it aids in providing low sheet resistance (For Example: See Column 2 Lines 13-20).

Additionally, since Ahn and Shepela are both from the same field of endeavor, the purpose disclosed by Shepela would have been recognized in the pertinent art of Ahn.

In regards to claim 15, Ahn discloses the following:

a) the dummy gate electrode is an electrode which is not electrically connected to a semiconductor integrated circuit of the semiconductor device (For Example: See Figure 3 and Column 3 Lines 52-59).

In regards to claim 17, Ahn discloses the following:

a) the dummy gate electrode pattern is provided with sidewalls on its side walls and is not electrically connected to a semiconductor integrated circuit of the semiconductor device (For Example: See Figure 3 and Column 3 Lines 52-59).

In regards to claim 18, Ahn discloses the following:

a) the dummy pattern is formed on the isolation insulating film (For Example: See Figure 3).

Response to Arguments

6. Applicant's arguments filed 11/14/06 have been fully considered but they are not persuasive. First, Applicant argues that "nowhere in this passage does Ahn disclose that both of the gate oxide film 123 and the dummy gate electrode 124c constitute a part of the dummy patterns." Applicant defines a dummy pattern as either a pattern made of insulating material or a

Art Unit: 2822

dummy gate electrode which is an electrode pattern having the shape of a gate electrode...and is not electrically connected to a semiconductor integrated circuit (For Example: See Page 4 Lines 22-25). Ahn discloses that dummy gate electrode (124c) is an electrode pattern having the shape of a gate electrode and a pattern made of insulating material (123) (For Example: See Figure 3 and Column 3 Lines 35-59).

Finally, Applicant argues that “even if the gate oxide film 123 could be interpreted as a dummy pattern, Ahn fails to disclose that the dummy patterns are formed on the isolation insulating film.” Merriam-Webster defines “on” as a function word to indicate close proximity with. Therefore, Ahn does disclose that the dummy patterns (124c and 124d) are formed on the isolation insulating film (122) (For Example: See Figure 3).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2822

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica Lewis whose telephone number is 571-272-1838.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular and after final communications.

ML

December 10, 2006

A handwritten signature in black ink, consisting of stylized, overlapping loops and curves, likely representing the initials or name of the examiner or supervisor mentioned in the text.